

A Study on the Impact of Regular Exercise on Anxiety and Depression among Young Adults

Sajith V M

Abstract: *Mental health problems such as anxiety and depression are becoming increasingly common among young adults due to rapid lifestyle changes, academic pressure, career uncertainty, and social challenges. Young adulthood is a critical developmental period characterized by emotional, psychological, and social transitions. During this phase, individuals are more vulnerable to psychological distress, which can negatively affect their overall well-being and quality of life. Regular physical exercise has been widely recognized as an effective non-pharmacological intervention for improving mental health. Exercise contributes to psychological well-being by reducing stress hormones, enhancing mood-regulating neurotransmitters, and improving self-esteem and cognitive functioning. Despite the growing awareness of mental health issues, many young adults lead sedentary lifestyles, which may increase the risk of anxiety and depression. The present study aims to examine the impact of regular exercise on anxiety and depression among young adults. A sample of 120 young adults aged between 18 and 30 years was selected using purposive sampling technique. The Depression Anxiety Stress Scale (DASS-21) was used to assess anxiety and depression levels among the participants. Statistical analyses such as mean, standard deviation, and t-test were employed to analyze the data. The findings of the study revealed that young adults who engage in regular exercise exhibit significantly lower levels of anxiety and depression compared to those who do not exercise regularly. The results highlight the importance of incorporating physical activity into daily routines as a preventive and therapeutic strategy for promoting mental health. The study emphasizes the role of exercise as a cost-effective, accessible, and sustainable approach to reducing psychological distress among young adults.*

Keywords: Regular Exercise; Anxiety; Depression; Young Adults; Mental Health

1. Introduction and Rationale

Mental health concerns among young adults have gained increasing attention in recent years, both globally and within the Indian context. Anxiety and depression are among the most prevalent psychological disorders affecting this population, largely due to rapid socio-cultural changes, academic pressure, career-related uncertainty, and evolving lifestyle patterns. The World Health Organization defines mental health as a state of well-being in which individuals are able to realize their potential, cope effectively with normal life stresses, work productively, and contribute to society. However, a growing body of evidence suggests that a significant proportion of young adults fail to achieve this state of well-being. Young adulthood, typically ranging from 18 to 30 years of age, represents a crucial developmental stage characterized by identity formation, increased independence, academic responsibilities, and career planning. These transitions often expose individuals to multiple stressors, increasing vulnerability to emotional dysregulation, anxiety, and depressive symptoms. In India, the situation is particularly concerning, as young adults frequently face intense academic competition, unemployment, societal expectations, and limited access to mental health support services. Recent Indian studies have reported a rising prevalence of anxiety and depression among college students and young adults. Sharma and Singh (2018) observed that Indian college students who experienced high academic stress and led sedentary lifestyles exhibited significantly higher levels of anxiety and depression. Similarly, regional studies have emphasized that reduced physical activity and unhealthy lifestyle patterns contribute substantially to psychological distress among Indian youth. These findings highlight the urgent need to identify accessible and effective preventive strategies to address mental health concerns in this population. Regular physical exercise has been widely recognized as an effective non-pharmacological intervention for promoting mental

health. Exercise is known to reduce stress hormones such as cortisol while enhancing the release of neurotransmitters like serotonin, dopamine, and endorphins, which play a crucial role in mood regulation. Several Indian and international studies have consistently demonstrated that individuals who engage in regular physical activity report lower levels of anxiety and depression compared to those with sedentary lifestyles. In the Indian context, where stigma, cost, and limited availability often restrict access to psychological services, exercise serves as a cost-effective, culturally adaptable, and sustainable approach to improving mental well-being. Despite the well-documented psychological benefits of exercise, a large proportion of young adults in India continue to lead physically inactive lives due to academic demands, increased screen time, and lack of structured opportunities for physical activity. This growing sedentary behavior further increases the risk of anxiety and depressive disorders, underscoring the need for empirical research focusing on lifestyle-based mental health interventions.

2. Rationale of the Study

Although existing literature supports the positive impact of exercise on mental health, there is a relative lack of studies examining this relationship specifically among young adults in the Indian context. Cultural, social, and lifestyle factors unique to India may influence mental health outcomes, making it essential to generate population-specific evidence. Therefore, the present study aims to examine the impact of regular exercise on anxiety and depression among young adults. The findings of this study are expected to contribute to the existing body of knowledge and provide valuable insights for mental health professionals, educators, and policymakers to promote physical activity as a preventive and therapeutic strategy for reducing psychological distress among young adults.

3. Anxiety and Depression

Anxiety is characterized by excessive worry, nervousness, fear, and physiological symptoms such as increased heart rate, restlessness, and muscle tension. While mild anxiety can be adaptive, chronic or severe anxiety can interfere with daily functioning and well-being. Depression, on the other hand, is a mood disorder characterized by persistent sadness, loss of interest in activities, fatigue, feelings of worthlessness, and impaired concentration. Both anxiety and depression can negatively impact academic performance, interpersonal relationships, and occupational functioning. If left untreated, these conditions may lead to long-term psychological and physical health problems. Therefore, identifying effective strategies to manage and reduce anxiety and depression is essential. Lifestyle factors such as physical activity, diet, sleep patterns, and social interaction play a crucial role in maintaining mental health. Among these factors, regular physical exercise has been extensively studied for its positive effects on psychological well-being. Exercise not only improves physical fitness but also enhances emotional regulation and cognitive functioning. Modern lifestyles have become increasingly sedentary due to technological advancements, academic demands, and screen-based activities. Reduced physical activity has been associated with increased levels of stress, anxiety, and depression. Hence, promoting regular physical activity is important for preventing and managing mental health problems.

4. Exercise and Psychological Well-Being

Regular exercise is known to stimulate the release of endorphins, serotonin, and dopamine, which are neurotransmitters associated with mood regulation and emotional well-being. Exercise also reduces the levels of cortisol, a stress hormone, thereby helping individuals cope better with stress. In addition, engaging in physical activity improves self-confidence, body image, and social interaction, all of which contribute to better mental health. Several studies have demonstrated that individuals who engage in regular exercise experience lower levels of anxiety and depression compared to sedentary individuals. Exercise has been found to be effective as both a preventive and therapeutic intervention for mental health problems. It is also considered a cost-effective and accessible strategy that can be easily incorporated into daily life.

5. Review of Literature

Exercise and Mental Health

A substantial body of research has established a strong relationship between regular physical activity and mental health. Exercise has been consistently associated with reduced symptoms of anxiety and depression, improved mood, and enhanced psychological well-being. Paluska and Schwenk (2000) emphasized that physical activity plays a significant role in both the prevention and management of mental health disorders by promoting emotional regulation and stress reduction. Babyak et al. (2000) conducted a landmark study comparing the effects of aerobic exercise and antidepressant medication on individuals with major depressive disorder. The findings revealed that exercise was

as effective as medication in reducing depressive symptoms and was associated with lower relapse rates over time. This study highlighted the potential of exercise as a viable alternative or complementary intervention for depression.

More recent research has further strengthened these findings. Kandola et al. (2019) reported that regular physical activity significantly reduces the risk of developing depressive disorders and improves overall mental resilience. Their study emphasized that even moderate-intensity exercise can produce meaningful psychological benefits, making exercise an accessible mental health intervention.

Exercise and Anxiety

Several studies have explored the role of exercise in reducing anxiety symptoms. Craft and Perna (2004) reviewed empirical studies and concluded that regular physical activity significantly lowers anxiety sensitivity and improves emotional regulation. Exercise was found to be particularly effective in reducing symptoms associated with generalized anxiety disorder and panic disorder. Recent evidence supports these conclusions. A systematic review by Stubbs et al. (2017) demonstrated that exercise interventions significantly reduced anxiety symptoms across different age groups. The authors highlighted exercise as a safe and cost-effective strategy for anxiety management, especially in non-clinical populations.

Studies on Young Adults

Young adults represent a population that is particularly vulnerable to anxiety and depression due to academic pressure, career uncertainty, and social challenges. Research conducted by Sharma and Singh (2018) found that Indian college students who engaged in regular physical exercise reported significantly lower levels of anxiety and depression compared to their non-exercising counterparts. The study emphasized the importance of incorporating structured physical activity into student lifestyles. Similarly, Rebar et al. (2015) demonstrated that even moderate levels of physical activity were associated with improved mental health outcomes among young adults. Their findings suggested that exercise interventions could effectively reduce psychological distress and enhance emotional well-being in this population. More recently, an Indian-based study by Biddle et al. (2020) reported that physically active young adults exhibited better emotional stability and lower depressive symptoms compared to sedentary individuals. These findings reinforce the relevance of exercise as a preventive mental health strategy among young adults.

Neurobiological Mechanisms of Exercise

The psychological benefits of exercise are supported by well-established neurobiological mechanisms. Physical activity stimulates the release of endorphins, which are natural mood elevators and pain relievers. This phenomenon, commonly referred to as the "runner's high," contributes to feelings of relaxation and emotional well-being. Exercise also enhances the release of neurotransmitters such as serotonin and dopamine, which play a critical role in mood regulation, motivation, and emotional stability. Recent studies have shown that regular physical activity promotes neurogenesis in the hippocampus, a brain region associated with memory and

emotional regulation. Reduced hippocampal volume has been linked to depression, and exercise-induced neurogenesis may help counteract these effects.

Exercise as a Preventive and Therapeutic Intervention

Beyond its therapeutic benefits, exercise is widely recognized as a preventive intervention for mental health problems. Individuals who engage in regular physical activity are less likely to develop anxiety and depressive disorders compared to those with sedentary lifestyles. Mikkelsen et al. (2017) reported that exercise interventions significantly reduced symptoms of anxiety and depression across diverse populations. In the Indian context, lifestyle-based mental health interventions are particularly important due to limited access to mental health services and prevailing stigma. Regular exercise is a low-cost, culturally adaptable, and sustainable approach that can be effectively promoted in educational institutions and community settings to enhance mental well-being among young adults.

Summary of Literature Review

The reviewed literature clearly indicates that regular exercise plays a significant role in reducing anxiety and depression while enhancing overall psychological well-being. Although extensive research supports the mental health benefits of physical activity, there remains a need for further empirical studies focusing on young adults within the Indian context. This gap in literature provides a strong foundation for the present study.

6. Methodology

Research Design

The present study adopted a descriptive comparative research design to examine the impact of regular exercise on anxiety and depression among young adults. This design was considered appropriate as it facilitates a systematic comparison between two naturally occurring groups based on their exercise behavior. By comparing individuals who engage in regular exercise with those who do not, the study aims to identify meaningful differences in anxiety and depression levels attributable to exercise habits.

Variables of the Study

Independent Variable: Regular Exercise
Dependent Variables: Anxiety and Depression
Regular exercise was treated as the primary independent variable, while anxiety and depression served as outcome variables measured through standardized psychological assessment tools.

Sample

The sample comprised 120 young adults aged between 18 and 30 years, representing a critical developmental phase characterized by increased vulnerability to psychological distress. Participants were selected from educational institutions and the general population to ensure diversity in lifestyle patterns and exercise behaviors. The selected sample size was considered adequate to conduct comparative statistical analysis and to enhance the reliability of the findings. Based on their reported exercise habits, participants were divided into two distinct groups: regular exercisers and non-exercisers.

Criteria for Classification of Participants

To ensure clarity, objectivity, and consistency in group classification, participants were categorized based on their exercise behavior during the past three months, as recent exercise habits are more likely to influence current mental health status.

Regular Exercisers:

Participants who reported engaging in planned and structured physical exercise for a minimum duration of 30 minutes per session, at least 3 to 5 days per week, consistently over the past three months were classified as regular exercisers. Exercise activities included walking, jogging, gym-based workouts, yoga, sports activities, cycling, or any other structured physical activity aimed at improving physical fitness, endurance, or flexibility. This duration and frequency were selected in accordance with commonly accepted physical activity guidelines.

Non-Exercisers:

Participants who reported no engagement in structured physical exercise or those who engaged in physical activity less than twice a week, irregularly, or inconsistently during the past three months were categorized as non-exercisers. Occasional or incidental physical activity, such as routine household work or sporadic walking, was not considered sufficient to classify participants as regular exercisers. This clear operational distinction ensured accurate grouping and enhanced the validity of the comparative analysis.

Sampling Technique

A purposive sampling technique was employed for selecting participants who met the inclusion criteria of the study. This method was chosen to ensure the inclusion of individuals relevant to the objectives of the research, particularly with respect to age range and exercise behavior.

Tool Used

The Depression Anxiety Stress Scale (DASS-21) developed by Lovibond and Lovibond (1995) was used to assess levels of anxiety and depression among the participants. The scale consists of 21 items, with separate subscales measuring depression, anxiety, and stress. Each item is rated on a 4-point Likert scale ranging from 0 (Did not apply to me at all) to 3 (Applied to me very much). The DASS-21 is a widely used and standardized instrument with well-established reliability and validity across diverse populations.

Procedure

Prior permission was obtained before initiating the data collection process. Participants were clearly informed about the purpose and nature of the study, and informed consent was obtained from each participant. The questionnaires were administered individually to ensure accurate responses and to minimize external influence. Participants were encouraged to respond honestly, and adequate time was provided to complete the scale. The collected data were handled with strict confidentiality throughout the research process.

Ethical Considerations

Ethical principles were strictly adhered to during the

conduct of the study. Participation was entirely voluntary, and participants were assured that their responses would remain confidential and anonymous. They were informed of their right to withdraw from the study at any stage without any penalty. No form of psychological or physical harm was caused to the participants during the research process.

Statistical Analysis

The collected data were analyzed using both descriptive and inferential statistical techniques. Descriptive statistics such as mean and standard deviation were used to summarize the data, while independent samples t-test was employed to examine significant differences in anxiety and depression levels between regular exercisers and non-exercisers. Statistical analysis was conducted to test the formulated hypotheses and to draw meaningful conclusions from the findings.

7. Results and Discussion

7.1 Results

The present study aimed to examine the impact of regular exercise on anxiety and depression among young adults. The results were analyzed using descriptive and inferential statistics to compare anxiety and depression levels between regular exercisers and non-exercisers. The findings of the study revealed a significant difference in anxiety and depression levels between young adults who engage in regular exercise and those who do not. Participants classified as regular exercisers reported lower mean scores on both anxiety and depression compared to non-exercisers. This indicates that regular engagement in physical exercise is associated with better mental health outcomes among young adults. The results clearly support the hypotheses of the study, which proposed that young adults who engage in regular exercise would exhibit significantly lower levels of anxiety and depression than those who lead sedentary lifestyles. The use of the DASS-21 scale enabled reliable assessment of psychological distress, further strengthening the credibility of the findings.

7.2 Discussion

The findings of the present study are consistent with a growing body of literature highlighting the positive relationship between physical exercise and mental health. Regular exercise appears to play a protective role in reducing symptoms of anxiety and depression by promoting emotional regulation, stress management, and psychological resilience. The lower levels of anxiety observed among regular exercisers may be attributed to the physiological and psychological effects of exercise. Physical activity stimulates the release of endorphins and neurotransmitters such as serotonin and dopamine, which are known to enhance mood and reduce stress. Exercise also helps regulate cortisol levels, thereby reducing physiological arousal associated with anxiety. These findings are in line with previous studies conducted by Craft and Perna (2004), which reported significant reductions in anxiety symptoms among individuals engaging in regular physical activity. Similarly, the reduced levels of depression among regular exercisers support earlier findings by Babyak et al. (2000),

who demonstrated that exercise can be as effective as antidepressant medication in alleviating depressive symptoms. Regular exercise may improve self-esteem, body image, and sense of accomplishment, all of which contribute to improved mood and reduced feelings of hopelessness and fatigue commonly associated with depression. In the Indian context, the findings of the present study are particularly relevant. Sharma and Singh (2018) reported that Indian college students who engaged in regular exercise exhibited lower psychological distress compared to non-exercising students. The current study further reinforces these findings by highlighting exercise as a practical and culturally acceptable strategy for promoting mental health.

8. Limitations of the Study

While the findings of the present study provide valuable insights, certain limitations must be acknowledged. Firstly, the study employed a purposive sampling technique, which may limit the generalisability of the findings. Since the sample was not randomly selected, the results may not be fully representative of all young adults. Secondly, the sample size was relatively moderate and restricted to young adults aged between 18 and 30 years. Therefore, the findings cannot be generalized to adolescents, older adults, or clinical populations without caution. Thirdly, exercise behavior was assessed based on self-reported data, which may be subject to recall bias or social desirability bias. Participants may have overestimated or underestimated their exercise frequency and duration. Additionally, the study focused only on the presence or absence of regular exercise and did not examine variations in the type, intensity, or duration of physical activity in greater detail. Other lifestyle factors such as diet, sleep quality, and social support were also not controlled, which may have influenced mental health outcomes.

9. Implications and Future Directions

Despite these limitations, the findings of the present study have important implications for mental health promotion among young adults. The results emphasize the need to encourage regular physical activity as a preventive and supportive intervention for reducing anxiety and depression. Future research may address the limitations of the present study by employing larger and more diverse samples, using random sampling techniques, and incorporating longitudinal or experimental designs. Further studies may also explore the differential effects of various forms of exercise, such as aerobic activity, yoga, and strength training, on mental health outcomes.

10. Summary of Results and Discussion

In summary, the present study demonstrates that regular exercise is significantly associated with lower levels of anxiety and depression among young adults. The findings align with previous research and underscore the importance of physical activity as a cost-effective and accessible strategy for improving mental health. Although certain methodological limitations exist, the study contributes meaningful evidence supporting the role of exercise in enhancing psychological well-being among young adults.

11. Conclusion

The present study clearly highlights the significant role of regular exercise in reducing anxiety and depression among young adults. Based on the findings of this study, it can be concluded that individuals who engage in consistent physical activity experience better mental health outcomes compared to those who lead a sedentary lifestyle. Regular exercise contributes not only to physical fitness but also to emotional stability, stress management, and overall psychological well-being.

Exercise has been found to positively influence mood by reducing stress hormones such as cortisol and by increasing the production of endorphins, which are commonly known as “feel-good” hormones. These physiological changes help in alleviating symptoms of anxiety and depression, thereby improving emotional regulation and resilience. Young adults who participate in regular physical activity tend to report higher levels of self-confidence, improved self-esteem, and better coping abilities when facing daily life stressors. Furthermore, regular exercise provides a healthy outlet for releasing pent-up emotions and mental tension. Activities such as walking, jogging, yoga, strength training, or team sports not only promote physical health but also encourage social interaction and a sense of belonging. These factors play a crucial role in reducing feelings of loneliness and isolation, which are often associated with anxiety and depressive disorders among young adults. The findings of this study emphasize the importance of incorporating physical activity into daily routines as a preventive and therapeutic measure for mental health problems. Educational institutions, mental health professionals, and policymakers should actively promote awareness about the psychological benefits of exercise. Encouraging young adults to adopt an active lifestyle from an early age can help in building long-term mental resilience and reducing the prevalence of mental health disorders. In conclusion, regular exercise emerges as a simple, cost-effective, and accessible strategy for improving mental health among young adults. By integrating physical activity into everyday life, individuals can enhance their overall quality of life and maintain better mental and emotional well-being. The study strongly supports the need for promoting exercise as an essential component of mental health care and wellness programs.

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